GOVERNMENT OF INDIA
EARTH SCIENCES
LOK SABHA

UNSTARRED QUESTION NO:2495
ANSWERED ON:30.11.2016
Rainfall Prediction
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Will the Minister of EARTH SCIENCES be pleased to state:

(a) whether the country has received less rain in the monsoon of 2016 than predicted by IMD;
(b) if so, the total rainfall received in monsoon of 2016, State-wise, and the average decrease in rainfall during the last five years including this year;
(c) whether any study has been carried out on the decreasing pattern and its impact on the nation in all fields including, agriculture, power, drinking water, etc.; and
(d) if so, the measures being taken to update the IMD system as well as to avoid inaccurate predictions by IMD?

Answer

THE MINISTER OF STATE FOR MINISTRY OF SCIENCE AND TECHNOLOGY AND MINISTRY OF EARTH SCIENCES
(SHRI Y. S. CHOWDARY)

(a) Yes Madam. The seasonal rainfall during the 2016 monsoon season (June-September) over the country as a whole was 862 mm or 3% less than its Long Period Average (LPA).India Meteorological Department (IMD) predicted monsoon season rainfall for the country as a whole likely to be 106% of the long period average with a model error of Â±4%.

(b) Total rainfall received in monsoon of 2016, State-wise is given in Annexure-I. The forecasted and realized seasonal rainfall anomalies during the period 2010-2016 are given in Annexure-II.

The Indian Monsoon is found to be a stable system. The all-India monsoon rainfall (June −September) does not show any long-term trend, but it exhibits year to year variability.

(c-d) Rainfall data from observational network of IMD for the period 1901-2015 showed that the all-India annual and monsoon rainfall does not show any significant trend. However, there are statistically significant regional variations of precipitation. Eastern parts of central India (Chhattisgarh, eastern Madhya Pradesh, Bihar) and Kerala showed decreasing trend in monsoon rainfall, while west coast of India (north of Kerala) and interior parts of Karnataka and Maharashtra showed increasing trend in seasonal monsoon rainfall.

IMD under Gramin Krishi Mausam Sewa (GKMS) scheme, generates district level weather forecast for the next five days for issuing Agromet Advisories and ultimately communicated to the farming community in the country. Feedback from farming community indicates that the advisories generated based on the forecast are very much useful and as a result farmers could get high crop productivity and also minimize the loss of crop due to aberrant weather.

IMD is also providing Extended Range Forecast System (ERFS) based Agromet Advisories at fortnightly scale in collaboration with Central Research Institute for Dryland Agriculture (CRIDA)-Indian Council of Agricultural Research (ICAR) to the state/district level planners. As the crop growth and development is closely related to active and break spells of monsoon rainfall, ERFS based GKMS bulletin is helping in strategic agricultural planning such as selection of crop varieties, application of farm inputs, contingent crops under delayed arrival and deficit rainfall situation etc. This enables the planners at national/state/district level to mobilize the resource inputs and to target affected areas for efficient implementation of contingency plan at farm level. This increases the agriculture productivity and helps farmers to enhance their risk coping capability.

IMD and Power System Operation Corporation Ltd. (POSOCO), a wholly owned subsidiary of Power Grid Corporation of India Ltd. signed a Memorandum of Understanding for optimum use of weather information / forecast in the power sector. All weather information provided by IMD shall be used by the Power System Operators across the India for better management of Indian Power System and for the purpose of analysis.

The Government has initiated a comprehensive modernization programme for IMD covering upgradation of (i) observation systems (ii) advanced data assimilation tools (iii) advanced communication and IT infrastructure (iv) high performance computing systems and (v) intensive/sophisticated training of IMD personnel to facilitate the implementation of advanced global/regional/ meso-scale prediction models for improving the accuracy of weather forecasts in all temporal and spatial scales and for quick dissemination of weather forecast assessments/warnings to the users.

Under the National Monsoon Mission initiative, other institutions of Ministry of Earth Sciences (MoES) , Indian Institue of Tropical Meteorology (IITM) Pune, Indian National Centre for Ocean Information Services (INCOIS), Hyderabad and National Centre for Medium Range Weather Forecasting (NCMRWF), NOIDA have embarked upon to build a state-of-the-art coupled ocean-atmospheric

climate model for a) improved prediction of monsoon rainfall on extended range to seasonal time scale (16 days to one season) and b) improved prediction of temperature, rainfall and extreme weather events on short to medium range time scale (up to 15 days) so that forecast skill gets quantitatively improved further for operational services of IMD.